<u>Terminology</u>

System - All files developed for the purposes of satisfying the client level requirements.

- **Data display module** - displays status updates and events to the user
- **Controller simulator** - Generates status updates and events then sends via RS422 serial protocol to the data display module.
- **Event Log file** - Will be generated by the data display module to contain 1 or more event strings encountered during a session.
- **Installer** - will deploy the project in the customers system and perform environment setup and initialization. Will record initial user preferences and take them into account during installation. I.e. "Do you want a shortcut on your desktop?"
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Environment - The directory our system will be placed in and all of its contents.

Status information - (See class diagram for specifics) General data pertaining to the weapon which can be measured at any point in time during session.

Status Update - serialized version of status information to be sent to the data display module from the controller simulator.

Event String - A string of the format "<time> <event message> <param 1> <param 2> <param 3>" generated by the controller simulator to simulate the occurrence of a weapon related event. The parameters can be NULL, but the event message must be specific text outlining what the event is. Ex. "[00:12:41] Weapon overheat 237 200" where 237 represents measured barrel temp and 200 represents max recommended barrel temp in degrees celsius.

Event update - The serialized version of the event string to be sent to the data display module from the controller simulator.

Session - The time measured from the moment the controller sim is connected to the data display module to the moment the controller sim is disconnected from the data display module.

Client level requirements

- **REQ01** - The data display module shall be a desktop application.
- **REQ02** - The data display module shall read input data via RS422 serial protocol from the controller simulator.
- **REQ03** - The data display module shall have the ability to write the following data into a log file…
  a. All event strings recorded up to the point in which the user requests the event log file. (this is the case for generating a log file during a session)
  b. All event strings recorded throughout a complete session. Up to 5 complete session log files are kept before overwrites occur. (this is the case for automatically generating a log file after a session)
- **REQ04** - The data display module shall display all status information directly to the application's window for the duration of a session. Requests for status updates will be sent by data display module to the controller simulator every .25 seconds.
- **REQ05** - The controller simulator shall send event updates to the data display module at most 0.1 seconds after they are generated.
- **REQ06** - The data display module shall not require admin rights to install, set up, or use.
- **REQ07** - The data display module shall include filtering options to filter events and errors along the following categories
  a. show only errors
  b. show only cleared errors
  c. show only active errors
  d. show only events

System Level Requirements

- **REQ08** - The system and its environment shall be installed via an installer file.
- **REQ09** - The system shall be portable on devices running windows 10 or 11.
- **REQ10G** - The system should be portable on Debian Linux distributions.
- **REQ11** - The system shall include a controller simulator which will generate and send status updates and events to the data display module for testing purposes.

<u>Software Level Requirements</u>

- Validate Client and System level requirements before writing software level requirements.